

Catalogue of the described Neuroptera Odonata (Dragonflies) of Ceylon, with Descriptions of New Species. By W. F. KIRBY, F.L.S., F.E.S., of the Natural History Museum.

[Read 7th December, 1893.]

(PLATES XLI. & XLII.)

COL. YERBURY, who has lately returned from Ceylon, bringing with him a considerable collection of insects of various orders, has liberally handed over the bulk of them to the Natural History Museum. His collection of Dragonflies is so extensive that I have thought it would be useful to draw up a complete list of the species at present known to inhabit that island, similar to the Catalogue of the Hemiptera of Ceylon, which I had the honour of laying before the Linnean Society two years ago †. At present I am able to enumerate seventy-six species, of which Col. Yerbury has succeeded in obtaining fifty-five. Of these I have described ten as new to science, and one of them is referable to a new and interesting genus.

The first list of Cinghalese Odonata was published by the late Dr. Hagen in vol. viii. of the 'Verhandlungen der k.-k. zool.-bot. Gesellschaft in Wien' (1858, pp. 478-481). He enumerated twenty-eight species as follows, the names under which they appear in the present list being given in the second column (those marked * are only manuscript names; and all except those marked † are noted as from Rambodde):—

HAGEN.	KIRBY.
†Calopteryx(Neurobasis)chinensis, L.	Neurobasis chinensis, L.
Euphæa splendens, Hagen.	Pseudophæa splendens, Selys.
†Micromerus lineatus, Burm.	Micromerus lineatus, Burm.
*†Trichocnemys serapica, Selys.	Copera serapica, Selys.
*Lestes elata, Hagen.	Lestes elatus, Selys.
*L. gracilis, Hagen.	L. gracilis, Selys.
Agrion coromandelianum, F.	Ceriagrion cerinorubellum, Brauer.
*A. tenax, Hagen.	Disparoneura tenax, Selys.
*A. hilare, Hagen.	Platysticta hilaris, Selys.
*A. velare, Hagen.	Agriocnemis velaris, Selys.
*A. delicatum, Hagen.	Micronympha aurora, Brauer.
†Gynacantha subinterrupta, Ramb.	Acanthagyna subinterrupta, Ramb.
Epophthalmia vittata, Burm.	Epophthalmia vittata, Burm.
Zyxomma petiolatum, Ramb.	Zyxomma petiolatum, Ramb.

HAGEN.

- Acisoma panorpoides*, *Ramb.*
Libellula tillarga, *F.*
L. variegata, *L.*
L. sabina, *Dru.*
L. congener, *Ramb.*
L. soror, *Ramb.*
L. aurora, *Burm.*
 **L. violacea*, *Nietn.*
 **L. perla*, *Hagen.*
L. sanguinea, *Burm.*
L. trivialis, *Ramb.*
L. contaminata, *F.*
L. equestris, *F.*
L. nebulosa, *F.*

KIRBY.

- Acisoma panorpoides*, *Ramb.*
Tholymis tillarga, *F.*
Rhyothemis variegata, *Joh.*
Orthetrum sabina, *Dru.*
Potamarcha obscura, *Ramb.*
Crocothemis soror, *Ramb.*
Trithemis aurora, *Burm.*
 — ?
 — ?
Urothemis sanguinea, *Burm.*
Trithemis trivialis, *Ramb.*
Brachythemis contaminata, *F.*
Neurothemis equestris, *Dru.*
Diplacodes nebulosa, *F.*

In the next year of the 'Verhandlungen' (vol. ix. 1859, pp. 206, 207) Hagen published the following supplementary list:—

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|---|---|
| † <i>Calopteryx</i> (<i>Vestalis</i>) <i>amœna</i> , <i>Hagen.</i> | <i>Vestalis apicalis</i> , <i>Selys.</i> |
| * <i>Lestes orientalis</i> , <i>Hagen.</i> | <i>Lestes orientalis</i> , <i>Selys.</i> |
| * <i>Disparoneura maculata</i> , <i>Nietn.</i> | <i>Platysticta maculata</i> , <i>Selys.</i> |
| (<i>D. tenax</i> , <i>Hagen</i> = <i>Agrion</i> t., above.) | |
| (<i>D. hilaris</i> , <i>Hagen</i> = <i>A. hilare</i> , above.) | |
| * <i>D. centralis</i> , <i>Hagen.</i> | <i>Disparoneura centralis</i> , <i>Selys.</i> |
| (<i>Gynacantha subinterrupta</i> , <i>Ramb.</i> ,
additional note.) | |
| † <i>Libellula stylata</i> , <i>Ramb.</i> | <i>Tranea stylata</i> , <i>Ramb.</i> |
| † <i>L. flavescens</i> , <i>Fabr.</i> | <i>Pantala flavescens</i> , <i>F.</i> |
| † <i>L. rufa</i> , <i>Ramb.</i> | <i>Erythemis rufo</i> , <i>Ramb.</i> |

This raises the number to thirty-five species.

Walker, in Tennent's 'Natural History of Ceylon' (1861), copies Hagen's first list, adding only *Libellula marcia*, *Dru.*, *flavescens*, *F.*, and *viridula*, *Beauv.* But these are not real additions, for *L. marcia*, *Dru.* = *variegata*, *L.*; and *L. flavescens* and *viridula* are synonyms of one species (which had already been included in Hagen's second list). Motschulsky (*Bull. Soc. Nat. Moscou*, xxxvi. no. iii. p. 8, 1863) merely quotes Walker's list, with the accidental omission of *Libellula aurora*, *Burm.*

Since this time some of Hagen's MS. species have been described by Baron de Selys-Longchamps, and several other species have been recorded or described as new from Ceylon by De Selys, Hagen, Brauer, Karsch, and myself. But the only special paper on the subject is one of my own, "On some

Neuroptera Odonata (Dragonflies) collected by Mr. E. E. Green in Ceylon" (Proc. Zool. Soc. Lond. 1891, pp. 203-206), in which fourteen species are enumerated, three of which were believed at the time to be new.

In the following list all the species of which the British Museum possesses specimens from Ceylon are marked (*), and those contained in Col. Yerbury's collection (†). The localities mentioned are all given on Col. Yerbury's authority, except those for which other authorities are quoted.

I am indebted to Baron de Selys-Longchamps for the names of a few additional species not previously recorded from Ceylon.

LIBELLULIDÆ.

LIBELLULINÆ.

*†1. THOLYMIS TILLARGA.

Libellula tillarga, *Fabr. Ent. Syst. Suppl.* p. 235 (1798).

Trincomali, Oct. 6 & 23, 1891. Kanthalai, Nov. 11, 16, 1891.

Henaratgoda, May 5, 1892.

Rambodde (*Hagen*).

A common East-Indian species.

*†2. PANTALA FLAVESCENS.

Libellula flavescens, *Fabr. Ent. Syst. Suppl.* p. 285 (1798).

Libellula viridula, *Beauv. Ins. Afr. Amér.* p. 69, pl. 3. f. 4 (1805).

Trincomali, Oct. 12, Nov. 10 & 20, Dec. 14, 1890; Nov. 11 and Dec. 17, 1891. Mahagany, near Trincomali, Sept. 20, 1891. Pigeon Island, Nov. 18, 1891.

An abundant species throughout the warmer parts of the world. The only specimen supposed to have occurred in Europe is thus mentioned by Curtis: "*Libellula Sparshalli*, Dale's MSS. Taken at Horning in 1823 by the late Mr. J. Sparshall; it is very similar to a Chinese species" (Brit. Ent. fol. 712). But, so far as I am aware, no description of the insect was ever published under this name.

*†3. HYDROBASILEUS EXTRANEUS. (Pl. XLI. fig. 1, ♀.)

Tramea extranea (*Hagen*), *Karsch, Berl. ent. Zeitschr.* xxxiii. p. 351 (1890).

♂. Long. corp. 47 millim.; app. anal. 3 millim.; exp. al. 82 millim.; long. pter. $3\frac{1}{2}$ millim.

♀. Long. corp. 45 millim.; exp. al. 90 millim.; long. pter. 5 millim.

Uniform testaceous-yellow in both sexes, with all the abdominal sutures and carinæ black; all the wings strongly tinged with yellow, and with the pterostigma pale yellow; fore wings with the triangle crossed by two nervures, and the subtriangular space by one or two, or none; a brown band runs from the anal angle over the extremity of the subbasal sectors, not quite reaching the lower part of the hind margin. It is narrowest nearest to the anal angle, and its upperside is more or less irregular. The anal appendages are rather short and tipped with black; the appendages of the second segment in the male are conspicuous.

Henaratgoda, Feb. 7, 1892 (♀). Mahagany, March 6, 1892 (♂).
Nalanda (*Fruhstorfer*).

Col. Yerbury brought home one specimen of each sex. I have added a brief description of the insect, as the few particulars given by Dr. Karsch are barely sufficient for its identification. It is said to occur at Penang and in Celebes, as well as in Ceylon.

*†4. TRAMEA STYLATA.

Libellula stylata, *Ramb. Ins. Névr.* p. 37 (1842).

Trincomali, Sept. 13, 1890; Nov. 1 & 11, 1891.

Originally described from Bombay.

*†5. TRAMEA BURMEISTERI.

Tramea Burmeisteri, *Kirb. Trans. Zool. Soc. Lond.* xii. p. 316 (1889).

Libellula chinensis, *Burm. Handb. Ent.* ii. p. 852 (1839), *nec De Geer*.

Trincomali, Nov. 16, 1890. Mahagany, Nov. 1 & 10, 1891.

Not an uncommon species in India and Ceylon. The specimens from Ceylon are generally rather darker than the others.

I may note here that Dr. Karsch, in one of his recent papers, accuses me of omitting *Trithemis erythræa*, Brauer, from Mauritius, from my Catalogue of Neuroptera Odonata. I find no such species in the writings of that author; but I find two species, *Tramea africana* and *Tramea erythræa*, which were omitted by Dr. Brauer himself in a general list which he published subsequently. Both these will be found under *Tramea* on p. 4 of my Catalogue, and I presume that the latter is what Karsch calls "*Trithemis*" *erythræa*.

*†6. RHYOTHEMIS VARIEGATA.

Libellula variegata, *Joh. Amœn. Acad.* vi. p. 412 (1764).

Libellula marcia, *Drury, Ill. Ex. Ent.* ii. pl. 45. fig. 3 (1773).

Trincomali, Nov. 1 & 11, 1891. Kanthalai, Nov. 15, 1891.

Rambodde (*Hagen*).

A common East-Indian species.

7. RHYOTHEMIS PHYLLIS.

Libellula phyllis, *Sulz. Gesch. Ins.* pl. xxviii. fig. 2 (1776).

A common East-Indian species, noted by Baron de Selys-Longchamps as occurring in Ceylon.

8. RHYOTHEMIS OBSOLESCENS.

Rhyothemis obsolescens, *Kirb. Trans. Zool. Soc. Lond.* xii. p. 321 (1889).

Described from Borneo; stated by Baron de Selys-Longchamps (*in litt.*) to occur in Ceylon.

*†9. RHYOTHEMIS LANKANA, sp. n.

Long. corp. 24 millim.; exp. al. 36 millim.; long. pter. 1½ millim.

Male. Deep violet-black; head steel-blue, with the clypeus and labrum bordered beneath with testaceous. Wings clear hyaline, with pale yellowish pterostigma; dark brown towards the base, with violet reflections; the centre of most of the cells lighter, a more or less hyaline basal streak below the principal radius; and on the hind wings 2 or 3 short subhyaline stripes running towards the inner margin. Fore wings with 1 cross-nervure in the triangle; post-triangular cells, 3 or 4 in the first row, followed by a series first of 3 and then of 2, only increasing to 4 on the hind margin; 7 antenodal and 6 or 7 postnodal cells, the last antenodal and 2 first postnodals not continuous; the postnodals rather irregular in the lower space; subtriangular space consisting of 3 cells. On the fore wings the opaque portion extends to between the 4th and 5th antenodal cross-nervures; it projects a little on the lower subcostal space, and then runs obliquely just beyond the triangle, but does not quite extend to the inner margin. Hind wings with 5 antenodal and 6 postnodal cross-nervures, the first two postnodals not continuous; the opaque portion extends to the nodus, without a break, and runs down to the hind margin almost beneath it, but is twice

deeply indented. Anal appendages hardly longer than the last segment of the abdomen.

Described from a single male specimen taken at Udagama on April 26, 1892.

The description being made from a single specimen may require ultimate modification. The insect is closely allied to *R. triangularis*, Kirb., from Borneo; but the latter species has three rows of post-triangular cells, increasing instead of decreasing on the fore wings.

10. NEUROTHEMIS CEYLANICA.

Neurothemis ceylanica, Brauer, *Verhandl. d. k.-k. zool.-bot. Ges. in Wien*, xvii. p. 11 (1867).

Usually considered to be one of the local races of *N. fluctuans*, Fabricius.

*†11. NEUROTHEMIS TULLIA.

Libellula tullia, Drury, *Ill. Ex. Ent.* ii. pl. 46. fig. 3 (1773).

Libellula equestris, Fabr. *Spec. Ins.* i. p. 523 (1781).

Hot Wells, Trincomali: adult males, Feb. 4, July 13, Sept. 13 & 27, 1891; immature males, Sept. 27, Oct. 8 & 15, 1891; females, apparently much scarcer, July 13, 1890, Oct. 8, 1891. Also at Tamblagam, Oct. 5, 1891.

Rambodde (*Hagen*).

A common East-Indian species.

*†12. NEUROTHEMIS INTERMEDIA.

Libellula intermedia, Ramb. *Ins. Névr.* p. 91 (1842).

Trincomali, Nov. 10. Andankulam, Nov. 12, 1891. Kanthalai, March 8, 1892.

*†13. TRITHEMIS TRIVIALIS.

Libellula trivialis, Ramb. *Ins. Névr.* p. 115 (1842).

Trincomali, July 13, 27, 1890; July 12, Sept. 2, 12, 15, Oct. 23, Nov. 11, 1891.

Rambodde (*Hagen*); Kandy (*Green*).

A common East-Indian species.

*†14. TRITHEMIS AURORA.

Libellula aurora, Burm. *Handb. Ent.* ii. p. 859 (1839).

Trithemis aurora, Brauer, *Verh. zool.-bot. Ges. Wien*, xviii. p. 177 (1868); *Selys, Ann. Mus. Genov.* xxx. p. 465 (1891).

Trithemis intermedia, *Kirb. Proc. Zool. Soc. Lond.* 1886, p. 327, pl. 33. fig. 4.

Trithemis Yerburi, *Kirb. Cat. Neur. Odon.* p. 18 (1890).

Hot Wells, Trincomali, July 13, 27, 1890; Sept. 13, Nov. 6, 13, 1891. Kanthalai, July 31, 1891.

Rambodde (*Hagen*); Pundaloya (*Green*).

A common East-Indian species.

*15. TRITHEMIS KIRBII.

Trithemis Kirbii, *Selys, Ann. Mus. Genov.* xxx. p. 465 (1891).

Trithemis aurora, *Kirb. Proc. Zool. Soc. Lond.* 1886, p. 327, pl. 33. fig. 3.

Recorded from India and Ceylon.

*†16. TRITHEMIS FESTIVA.

Libellula festiva, *Ramb. Ins. Névr.* p. 92 (1842).

Libellula infernalis, *Brauer, Verh. zool.-bot. Ges. Wien*, xv. p. 507 (1865).

Trincomali, Aug. 19, Sept. 18, Dec. 6, 1890. Hot Wells, Nov. 8, 1891.

*†17. BRACHYTHEMIS CONTAMINATA.

Libellula contaminata, *Fabr. Ent. Syst.* ii. p. 382 (1793).

Trincomali, July 24, 1890; Oct. 6 and Nov. 11, 1891. Andankulam, Oct. 5, 1891. Kanthalai, Nov. 15, 1891.

Rambodde (*Hagen*).

A common East-Indian species.

“A large Asilid (*Promachus maculatus*, Loew?) was taken preying on this species” (*Yerbury*).

*†18. CROCOTHEMIS SOROR.

Libellula soror, *Ramb. Ins. Névr.* p. 82 (1842).

Andankulam, Oct. 5, 1891. Tanglegam, Oct. 5, 1891. Kanthalai, March 8, 1892. Trincomali and Mahagany, July 27, Aug. 5, 1890; Sept. 16, Oct. 6, Nov. 24, Dec. 20, 1891.

Rambodde (*Hagen*).

Common in India and Ceylon.

*†19. BRACHYDIPLAX SOBRINA.

Libellula sobrina, *Ramb. Ins. Névr.* p. 114 (1842).

Brachydiplax sobrina, *Selys, Ann. Mus. Genov.* xxx. p. 449 (1891).

Brachydiplax indica, *Kirb. Trans. Zool. Soc. Lond.* xii. p. 329, pl. 54. fig. 9 (1889).

Brachydiplax Gestroi, *Selys, Ann. Mus. Genov.* xxx. p. 451 (1891).

Hab. Trincomali, Aug. 3, 5, Sept. 13, Oct. 5, 1890. Tangle-gam and Andankulan, Oct. 5, 1891.

Rambodde (*Hagen*).

*†20. *UROTHEMIS SANGUINEA*.

Libellula sanguinea, *Burm. Handb. Ent.* ii. p. 858 (1839).

Libellula signata, *Ramb. Ins. Névr.* p. 117 (1842).

Kanthalai, Nov. 15, 1891.

Rambodde (*Hagen*).

Occurs in India and Ceylon.

*†21. *UROTHEMIS VITTATA*, sp. n. (Pl. XLII. fig. 2, ♀.)

Long. corp. 38–40 millim.; exp. al. 67 millim.; long. pter. $2\frac{1}{2}$ millim.

Reddish ochreous; labrum, the ocellar suture, more or less of the pleural sutures, the legs, except the base of the femora, a broad stripe on the back of the abdomen, widened at each end of the segments, and interrupted by the sutures, but not by the carinae, and two spots at the ends of the segments, and sometimes also in the middle, beneath, black. Head black behind the eyes, with a yellow space in the middle and two on each side. Wings hyaline, with ochreous nervures in the male, browner in the female; membranule whitish; hind wings tinged with saffron at the base. Fore wings with 6 antenodal and 5 postnodal nervures, the two first postnodals not continuous, and the first very oblique; hind wings with 5 antenodals and postnodals, the two first postnodals not continuous. Pterostigma yellowish, between brown nervures, covering a little more than one cell. All the triangles open, and followed by two rows of cells, increasing; the outer side of that on the fore wings showing a slight tendency to form an angle towards the nervure dividing the two first cells, subtriangular space with three cells; triangle of hind wings rather pointed, its base extending nearer the base of the wings than the arculus. Anal appendages of male rather shorter than the last two segments.

Trincomali, Sept. 10, 1891 (♀).

The male is described from an Indian specimen from Saunders's collection. Not closely allied to any other species; resembles some of the *Corduliinae* in coloration, to which subfamily *Urothemis* has some affinity.

*†22. LATHRECISTA SIMULANS.

Agrioptera simulans, *Selys, Ann. Mus. Genov.* xiv. p. 300 (1879).

Trincomali and Mahagany, Oct. 12, 1890; Sept. 20, Oct. 20, Nov. 20, 28, Dec. 17, 1891; March 6, 1892. Velvery, Nov. 25, 1891. Tamblegam, Nov. 19, 1891.

Recorded from Ceylon and Malacca.

*†23. POTAMARCHA OBSCURA.

Libellula obscura, *Ramb. Ins. Névr.* p. 64 (1842).

Libellula congener, *Ramb. l. c.* p. 70 (1842).

Potamarcha obscura, *Karsch, Berl. ent. Zeitschr.* xxxiii. p. 370 (1890).

Trincomali, Sept. 16, Nov. 10, Dec. 16, 1891. Mahagany, Sept. 20, 1891. Velvery, Oct. 25, 1891.

Rambodde (*Hagen*).

Recorded from the Philippines, Java, and Malacca, as well as from Ceylon. The British Museum also possesses specimens from India and Celebes.

BRADINOPYGA, g. n.

Frontal tubercle concave; abdomen rather slender, hardly thickened at base, a little shorter than the hind wings; segments 2-4 strongly carinated; pterostigma pale at both ends. Fore wings with 12-13 antenodal and 8-9 postnodal cross-nervures, triangle traversed by 1 nervure, sometimes a little beyond the level of that of the hind wings, followed by 3 rows of cells, increasing, the base slightly oblique, no supratrangular nervures; 1 cross-nervure in the male in the lower basal cell, 2 in the female, nodal and subnodal sectors very slightly waved: hind wings with 8 or 9 antenodal, and 9 or 10 postnodal nervures, triangle followed by 3 rows of cells, increasing, sectors of the triangle separated at base. Anal appendages slender, pointed, those of the female as long as the 9th segment, those of the male somewhat longer; lower appendage of the male broad, spatulate, nearly as long as the others.

All the other characters as in my definition of *Hemistigma*.

This genus is evidently the Asiatic representative of the African *Hemistigma*.

*†24. BRADINOPYGA STIGMATA. (Pl. XLI. fig. 3, ♂.)

Long. corp. 36-40 millim.; exp. al. 65 millim.; long. pter. 4 millim.

Male. Dull testaceous; head with the labrum yellow, and the

labium paler yellow; mandibles and suture of the labium black; occiput spotted with black and tawny. Sutures of the thorax, and a transverse stripe above, black; sides of the thorax and pleura with several rather ill-defined pale spots. Abdomen with the sutures black, and mottled and blotched with black, with pale spots and streaks on the sides of segments 3-7. Legs with the tarsi and front tibiæ black. Wings hyaline, with blackish nervures; costal nervure tawny on the outside; pterostigma black in the middle, whitish or yellowish at each extremity. Anal appendages yellow.

Female similar, but with the blackish markings much more extended, especially on the abdomen, where at least the hinder half of all the segments is black; the legs are also much varied with brown.

Hab. Trincomali, July 7, 1890.

Col. Yerbury's specimen is a male; the female described is labelled "India" with doubt.

25. ZYXOMMA PETIOLATUM.

Zygomma petiolatum, *Ramb. Ins. Névr.* p. 30, pl. 2. fig. 4 d (1842); *Hag. Verh. zool.-bot. Ges. Wien*, viii. p. 479 (1858).

Rambodde (*Hagen*).

A common Indian species. It is likewise recorded from Celebes; but as there are several closely allied forms of the genus, it is not unlikely that the Celebesian specimens may belong to a distinct species.

*†26. ORTHETRUM SABINA.

Libellula sabina, *Drury, Ill. Ex. Ent.* i. pl. 48. fig. 4 (1773).

Hot Wells, Trincomali, Sept. 11, 13, 1891.

Rambodde (*Hagen*).

A very common and widely distributed species throughout the tropics of the Old World.

*†27. ORTHETRUM OBLITUM. (Pl. XLII. fig. 3, ♀.)

Libellula oblita, *Ramb. Ins. Névr.* p. 123 (1842).

Hot Wells, Trincomali, Aug. 3, 1890. Velvery, Dec. 27, 1891.

Also occurs in India and Australia.

*†28. ORTHETRUM PRUINOSUM.

Libellula pruinosa, *Burm. Handb. Ent.* ii. p. 858 (1839).

Trincomali, Sept. 15, Oct. 8, Nov. 24, 1891. Kanthalai, March 8, 1892.

Also recorded from India, China, Philippines, Java, Sumatra, and Borneo.

Pundaloya (*Green*).

*†29. ORTHETRUM CARNATICUM.

Libellula carnatica, *Fabr. Ent. Syst. Suppl.* p. 284 (1798).

Orthetrum carnaticum, *Kirb. Proc. Zool. Soc. Lond.* 1891, p. 204, t. 20. f. 1.

Hot Wells, Trincomali, Sept. 27, 1891. Kitti Otu, Feb. 21, 1892. Kanthalai, March 8, 1892. Haputale, June 8, 1892. Kandy, May 18, 1892. Hiaduma, April 29, 1892.

Pundaloya (*Green*).

A common Indian species.

Fabricius places this species between *Orthetrum cancellatum* and *Sympetrum pedemontanum*. There is nothing in the description to fix the species positively; but if, as is most probable, Fabricius intended to compare the insect with *O. cancellatum*, then I think my identification is most probable. De Selys identifies *L. carnatica* with *Trithemis festiva* (*anted*, No. 16).

30. ORTHETRUM GLAUCUM.

Libellula glauca, *Brauer, Verh. zool.-bot. Ges. Wien*, xv. p. 1012 (1865).

Balangodde (*Brauer*).

I have not yet received any specimens which I can identify with this species.

*†31. ORTHETRUM TRICOLOR, sp. n.

Long. corp. 41 millim.; exp. al. 61 millim.; long. pter. 4 millim.

Male. Head yellow, frontal tubercle black, truncated, the black colour extending on the sides of the clypeus in front of the eyes; occiput yellow, with black markings; thorax yellow, with all the sutures black, and black shoulder-stripes, not quite complete behind. Abdomen pulverulent blue, tricarinate, segments 2 and 3 transversely carinated, segments 1 and 2 spotted with yellow above, and segments 1-3 with an interrupted yellow stripe on the sides; legs black, front femora yellow beneath. Wings hyaline, with black nervures, costal nervures bisected by a pale line: fore wings with 12 antenodal (continuous) and 8 or 9 postnodal cross-nervures, the first 2 postnodals not continuous; pterostigma rather long, yellow between black nervures, the uppermost thickest; triangle traversed by one nervure, and

followed by 3 rows of cells, increasing; nodal sector waved; one supratrangular nervure; subtriangular space consisting of 3 cells: hind wings with 9-10 antenodal and 9-10 postnodal cross-nervures, the first 3 postnodals not continuous; triangle followed by 3 rows of cells, increasing, the sectors slightly separated. Anal appendages rather longer than the 9th segment; a yellow spot on the 10th segment above.

Kandy, May 30, 1892.

32. ERYTHEMIS RUFA.

Libellula rufa, *Ramb. Ins. Névr.* p. 71 (1842).

Recorded from Ceylon, Java, Celebes, and Burmah. I have seen no specimens which I can identify with this species.

*†33. DIPLOCODES NEBULOSA.

Libellula nebulosa, *Fabr. Ent. Syst.* ii. p. 379 (1793).

Trincomali, July 17 & 20, Sept. 12 & 13, 1891. Andankulam, Sept. 5, Oct. 7, 1891. Kanthalai, March 3, 1892. Perriyakulam (=great tank), March 27, 1892.

Rambodde (*Hagen*).

A very common Indian species.

*†34. ACISOMA PANORPOIDES.

Acisoma panorpoides, *Ramb. Ins. Névr.* p. 28 (1842).

Kanthalai, July 31, 1890. Andankulam, Oct. 5 & 7, 1891.

Rambodde (*Hagen*).

Common in India, China, and Ceylon. It is probable that the allied African forms are distinct.

35. TETRATHEMIS FRUHSTORFERI.

Tetrathemis Fruhstorferi, *Karsch, Ent. Nachr.* xv. p. 321 (1889).

Belihul-Oya (*Karsch*).

*†36. TETRATHEMIS YERBURII. (Pl. XLI. fig. 4, ♀.)

Long. corp. 26-28 millim.; exp. al. 44-51 millim.; long. pter. 2 millim.

Inky black; head with the vertex metallic green, a small yellow spot on each side above the antennæ and on the lower angles of the vertex; ocelli orange, nasus and rhinarium yellow; all the lower mouth-parts black, except the sides of the labium. Thorax with the collar, a short dash on the median line, three broad pleural stripes, one before and two below the wings, the septa, pnystega, and metapnystega yellow; abdomen with yellow

spots on the sides of segments 2-7; the first three are double, being divided by the carinæ (the carina on the 4th segment is nearly obsolete above); the spots are more or less produced upwards, and those on the 7th segment nearly meet on the back; the spot in front of the carina on segment 4 and that on the sides of segment 6 are obsolete in the male. Wings clear hyaline, slightly iridescent, with a smoky patch at the tip of each; pterostigma rather thick, dark brown, covering two cells; fore wings with 9-10 antenodal and 5-6 postnodal cross-nervures; hind wings with 8 antenodals and 5-6 postnodals; first postnodal on all the wings not continuous; trapeziums of fore wings and triangles of hind wings open; one supratrangular nervure and 2 cross-nervures in lower basal cell on all the wings; anal appendages of male as long as the 9th and 10th segments together.

Kandy, May 31 and June 30, 1892.

Described from three specimens—two males, and a female taken *in coitu* with one of them. The description given above, with the slight exceptions indicated, applies to both sexes.

Differs from all previously described species in the hyaline wings with clouded tips.

CORDULINÆ.

*†37. EPOPTHALMIA CYANEOCEPHALA.

Eophthalmia cyaneocephala, Hagen, *Verh. zool.-bot. Ges. Wien*, xvii. p. 60 (1867).

Eophthalmia vittata, Hagen, *l. c.* viii. p. 479 (1858), *nec* Burm.

Tamblegam, Oct. 5, 1891.

Colombo (*Brauer*); Rambodde (*Hagen*).

ÆSCHNIDÆ.

GOMPHINÆ.

GOMPHINA.

38. ÆSHNA CEYLONICA.

Gomphus (?) *ceyonicus*, Selys, *Bull. Acad. Belg.* (2) xlvi. p. 455 (1878).

Rambodde (*Nietner*).

39. ANISOGOMPHUS NIETNERI.

Gomphus (?) *Nietneri*, Selys, *Bull. Acad. Belg.* (2) xlvi. p. 449 (1878).

Rambodde (*Nietner*).

ÆSCHNINÆ.

*†40. ICTINUS RAPAX.

Diastatomma rapax, *Ramb. Ins. Névr.* p. 169 (1842).

Periyakulum, Nov. 11, 1891. Huldamura, June 10, 1892.

A common East-Indian species.

*†41. ANAX GUTTATUS.

Anax guttatus, *Burm. Handb. Ent.* ii. p. 840 (1839).

Trincomali, Nov. 24, 1891.

A common East-Indian species.

*†42. HEMIANAX EPHIPPIGER.

Æschna ephippigera, *Burm. Handb. Ent.* ii. p. 840 (1839).

Hot Wells, Trincomali, Jan. 14, 1892.

Common throughout the warmer parts of the Old World.

43. ACANTHAGYNA SUBINTERRUPTA.

Gynacantha subinterrupta, *Ramb. Ins. Névr.* p. 212 (1842).

Gynacantha subinterrupta, *Hagen, Verh. zool.-bot. Ges. Wien*, viii. p. 479 (1858), ix. p. 207 (1859).

Negombo (*Nietner*).

According to *Nietner* (quoted by *Hagen*) this species flies in the evening. It is found in Java, Bouru, Celebes, Papua, &c., as well as in Ceylon.

*44. ACANTHAGYNA FURCATA.

Gynacantha furcata, *Ramb. Ins. Névr.* p. 210 (1842).

There are specimens of this species in the British Museum Collection from India, Ceylon (*Wenham's Collection*), and Borneo.

AGRIONIDÆ.

AGRIONINÆ.

*†45. NEUROBASIS CHINENSIS.

Libellula chinensis, *Linn. Syst. Nat.* i. p. 545 (1758).

Huldamura, June 10, 1892.

This species does not appear to be very common in Ceylon, though generally abundant throughout the East Indies.

*†46. VESTALIS APICALIS.

Vestalis apicalis, *Selys, Bull. Acad. Belg.* (2) xxxvi. p. 612 (1873); (2) xlvii. p. 362 (1879).

Neurobasis apicalis, *Kirb. Proc. Zool. Soc. Lond.* 1891, p. 204, pl. 20. figs. 2, 2 a.

Calopteryx (Vestalis) amœna, Hag. *Verh. zool.-bot. Ges. Wien*, ix. p. 206 (1859), *nec Vestalis amœna*, Selys.

Kottawa, April 19 & 24, 1892.

Nawala-pittia (*Green*).

Col. Yerbury obtained several specimens of both sexes. The female is green, with the face mostly pale yellow in front, and the lateral sutures, underside of the thorax, and a lateral stripe on the basal segments of the abdomen of the same colour. Legs black, femora striped beneath with pale yellow. Wings of a slightly clouded hyaline, with black nervures. The three upper thoracic carinæ are black.

This female has much resemblance to that of *Neurobasis chinensis*; but the latter may be at once distinguished by the reticulated basal space, the green costal nervure, and generally the more clouded wings, with a false pterostigma.

*†47. PSEUDOPHÆA SPLENDENS.

Euphæa splendens, Selys, *Syn. Calopt.* p.52 (1853).

Kottawa, April 19, 1892.

Rambodde (*Hagen*).

Female. Black, two yellow spots on the vertex, a large one within each eye in front, separated by the antennæ from a smaller one, below which is a transverse yellow stripe, divided in two in the middle, just above the mandibles; prothorax with a yellow spot above on each side; mesothorax with two stripes on the back, below which in front are one or two small spots, followed by two broader stripes on the pleura; meso- and meta-thorax with many small yellow spots between the wings; abdomen with the 1st segment bordered behind with yellow; the segments with dorsal and lateral lines—the former narrowest, disappearing on the 5th segment, the latter continued to the 7th; 9th with a yellow spot on each side; front femora striped below with yellow; wings yellowish hyaline, with black nervures and pterostigma.

*†48. PSEUDOPHÆA CARISSIMA, sp. n. (Pl. XLII. fig. 4, ♂.)

Long. corp. 40 millim.; exp. al. 50 millim.; long. pter. 3 millim.

Male. Inky black, two reddish-tawny appendages at the extremity of the 8th segment beneath. Wings not petiolated, with purple, violet, and green reflexions, semihyaline towards

the base, half as far as the nodus, but very slightly on the hind wings, and only towards the costa.

Upper appendages as long as the 10th segment, compressed, spatulate.

Kottawa, April 19, 24, 27, 1892.

Allied to *P. splendens*, but much smaller and differently coloured.

Var. *viridissima*.—Differs from the type in the fore wings, the extremity of the hind wings, and their costal area to the nodus being iridescent green with a slight coppery shade, and the hind wings, except at the extremity, the small hyaline patch at the base, and along the costal area to the nodus being of a brilliant green, as in *P. splendens*.

Kottawa, April 19, 1892.

As the only specimen of this form was taken at the same time and place as the others, which it much resembles, except in colour, I do not feel justified in regarding it as a distinct species.

*49. MICROMERUS FINALIS.

Micromerus finalis, *Selys, Bull. Acad. Belg.* (2) xxvii. p. 665 (1869).

Pundaloya (*Green*).

*†50. MICROMERUS LINEATUS.

Calopteryx lineata, *Burm. Handb. Ent.* ii. p. 826 (1839).

Kanthalai, March 8, July 31, Aug. 8, 1892. Kottawa, April 24, 1892.

Nawala-pittia (*Green*).

Also met with in India and Java.

CÆNAGRIONINÆ.

NORMOSTIGMATINA.

*†51. COPERA MARGINIPES.

Platynemis marginipes, *Ramb. Ins. Névr.* p. 240 (1842).

Hot Wells and other localities near Trincomali, July 4 & 17, 1890; Aug. 30, Sept. 27, Oct. 8 & 29, Nov. 22, 1891. Andankulam, Oct. 22, 1891. Hinaduma, April 28, 1892.

Many specimens, some taken *in coitu*. As was to be expected in the case of such delicate species, most of these were damaged. Previously recorded from Java, Malacca, and (probably) Japan.

52. COPERA SERAPICA.

Psilocnemis serapica, *Selys, Bull. Acad. Belg.* (2) xvi. p. 171 (1863).

Trichocnemys serapica, *Hagen, Verh. zool.-bot. Ges. Wien*, ix. p. 478 (1858).

Ceylon (*Nietner*).

Also met with in the Nicobar Islands.

*†53. PLATYSTICTA MACULATA.

Platysticta maculata, *Selys, Bull. Acad. Belg.* (2) x. p. 437 (1860).

Platysticta Greeni, *Kirb. Proc. Zool. Soc. Lond.* 1891, p. 204, pl. 20. figs. 3, 3 a.

Haycock Hill, April 27, 1892.

Rambodde (*Nietner*); Pundaloya (*Green*).

On carefully comparing the descriptions again, I have come to the conclusion that my *P. Greeni* is probably identical with *P. maculata*, De Selys.

*†54. PLATYSTICTA APICALIS, sp. n. (Pl. XLII. fig. 1, ♂.)

Long. corp. 57–61 millim. (♂), 51 millim. (♀).

Male. Steel-blue; rhinarium, nasus, prothorax (except the hind border above, under surface of thorax, and a lateral stripe), coxæ, trochanters, and base of femora all yellow, legs otherwise black; sides and under surface of abdomen beneath mostly yellow (or in the female tawny), except towards the extremity; segments 9 and 10 blue above in male.

Wings hyaline, with blackish nervures; apex, as far as the inner edge of the pterostigma, smoky brown in male, yellowish in female; pterostigma longer than broad, large, lozenge-shaped, dark brown, covering one cell (exceptionally two). Subnodal sector broken, median sector rising before the vein descending from the nodus; sectors of the arculus rising close together from a very short stalk; 19–21 postcubital nervures.

Upper anal appendages of male black, more than twice as long as the 10th segment, curved up and then downwards, and dilated at each extremity; lower appendage more slender, shorter, with an erect point at its base and a notch before its upturned point.

In the female the terminal segments of the abdomen are not blue, but there is a small yellow mark on each side of the 9th, and one on the back of the 10th, in the middle. Anal appendages strong, pointed, as long as the 10th segment.

Belihul-Oya, June 6, 1892.

Described from three specimens, two males and a female. It is a stouter insect than *P. maculata*, to which it is closely allied, and the dark apical patch is very characteristic.

*†55. *PLATYSTICTA TROPICA*.

Platysticta tropica, *Selys, Bull. Acad. Belg.* (2) x. p. 438 (1860).
Passara, June 6, 1892. Haycock Hill, July 27, 1892.

56. ? *PLATYSTICTA MONTANA*.

Platysticta montana, *Selys, Bull. Acad. Belg.* (2) x. p. 438.
Described from Ceylon.

There is a single male in Col. Yerbury's collection, which I refer with some doubt to this species, as it has only twelve post-nodal cross-nervures.

57. *PLATYSTICTA HILARIS*.

Platysticta hilaris, *Selys, Bull. Acad. Belg.* (2) x. p. 438 (1860).
Rambodde (*Hagen*).

*58. *PLATYSTICTA DIGNA*.

Platysticta digna, *Selys, Bull. Acad. Belg.* (2) x. p. 440 (1860).
Described from Ceylon.

*†59. *DISPARONEURA CÆSIA*.

Alloneura cæsia, *Selys, Bull. Acad. Belg.* (2) x. p. 450 (1860).
Galbodde, May 24, 1892.
Pundaloya (*Green*).

60. *DISPARONEURA CENTRALIS*.

Alloneura centralis, *Selys, Bull. Acad. Belg.* (2) x. p. 449 (1860).
Rambodde (*Nietner*).

*†61. *DISPARONEURA TENAX*. (Pl. XLI. fig. 2, ♂.)

Alloneura tenax, *Selys, Bull. Acad. Belg.* (2) x. p. 449 (1860).
Passara, June 6, 1892.
Rambodde (*Hagen*).

*†62. *DISPARONEURA OCLATA*, sp. n.

Long. corp. 40 millim.; exp. al. 42 millim.; long. pter. 1 millim.

Female. Black with pale yellow markings above, pale yellow below. Head black, with a very broad band running from eye to eye above the epistoma, where it is somewhat narrowed in the middle; prothorax and mesothorax black above, with two yellow lines, narrowest behind; sides yellow, with a black lateral line on

the principal suture, narrow and interrupted in front and broader behind; abdomen very slender, black, yellowish beneath in front, and with a lateral yellowish line as far as the 6th segment; femora tawny, tibiæ whitish, knees and tarsi blackish; wings hyaline, with blackish nervures; pterostigma black, thick, covering a little more than one cell; 16 postnodal nervures.

Anal appendages black, pointed, as long as the 8th segment.

Kottawa, April 24, 1892.

Differs from *D. tenax* and allies by the two conspicuous yellow spots on the vertex between the eyes.

*†63. *DISPARONEURA SITA*, sp. n.

Male (probably young). Head black above and behind, whitish in front and behind; epistoma narrowly edged with black in front, a narrow whitish stripe on the vertex, interrupted by a black dot in the middle; thorax bronzy black, with two whitish dorsal lines and broader lateral stripes; abdomen bronzy brown, with a narrow whitish ring at the base of segments 2-5; segments 2 and 3 with a very narrow dorsal whitish line, and 2 with a lateral yellowish line, angulated upwards towards the extremity, where it meets on the back; the tips of segments 2-5 blackish; 6 with the terminal third rufous; 7-10 black; anal appendages short, whitish, the lower appendages longer than the upper; wings hyaline, with blackish nervures; 12-14 postnodal cross-nervures on fore wings; pterostigma blackish, lozenge-shaped, surrounded by a pale line; upper sector of the triangle on the fore wings extending one or two cells beyond the vein of the nodus; second sector of the triangle forming a very small isolated cell, rising just before the basal postcostal nervure, and only extending about one-third of the distance from this to the next; legs whitish, lined with black; tarsi black.

A more adult specimen is nearly black, with the stripe on the vertex and the narrow dorsal lines on the thorax bluish, nearly obsolete.

Hot Wells, Trincomali, Oct. 23, 1890; Sept. 6 & 13, 1891.

Probably allied to *D. interrupta*, De Selys, from Singapore.

*†64. *ONYCHARGIA ATROCYANA*.

Argia atrocyana, Selys, *Bull. Acad. Belg.* (2) xx. p. 416 (1865).

Udagama, April 30, 1892.

Previously recorded from Singapore and Java.

*†65. MICRONYMPHA SENEGALENSIS.

Agrion senegalensis, *Ramb. Ins. Névr.* p. 276 (1842).

Hot Wells, Trincomali, Nov. 11, 1891.

A common species throughout Africa and the East Indies.

*†66. MICRONYMPHA AURORA.

Agrion (Ischnura) aurora, *Brauer, Verh. zool.-bot. Ges. Wien*, xv. p. 509 (1855).

Ischnura delicata, *Selys, Bull. Acad. Belg.* (2) xlii. p. 990 (1870).

Trincomali and neighbourhood, Sept. 13, 16, 27, Oct. 6, Nov. 23, Dec. 29, 1891. Mahagany, Dec. 20, 1891. Velveery, Oct. 25, 1891. Andankulam, Oct. 7, 1891. Pusara, June 6, 1892. Bandarawella, June 7, 1892.

Rambodde (*Hagen*); Pundaloya (*Green*).

Common throughout the East Indies; also found in Australia and Tahiti.

*†67. CERIAGRION CERINORUBELLUM.

Agrion (Pyrrhosoma) cerinorubellum, *Brauer, Verh. zool.-bot. Ges. Wien*, xx. p. 511 (1865).

Mahagany, Sept. 20, 1891. Trincomali and Hot Wells, Sept. 13, 27, Oct. 3, 6, 1891. Henaratgoda, Feb. 7, 1892.

A common East-Indian species.

*†68. CERIAGRION COROMANDELIANUM.

Agrion coromandelianum, *Fabr. Ent. Syst. Suppl.* p. 287 (1798).

Trincomali, Oct. 12, 1890; Oct. 3, Nov. 24, 1891; Jan. 6, 1892.

Rambodde (*Hagen*).

Also met with in India.

*†69. ARCHIBASIS CEYLANICA.

Archibasis ceylanica, *Kirb. Proc. Zool. Soc. Lond.* 1881, p. 255, pl. 20. fig. 4.

Hot Wells, Trincomali, Sept. 13, 1891.

Kandy (*Green*).

70. AGRIOCNEMIS PYGMÆA.

Agrion pygmæum, *Ramb. Ins. Névr.* p. 278 (1842).

Noted by Baron de Selys Longchamps as found in Ceylon.

An Indian species.

71. AGRIOCNEMIS VELARIS.

Agrioncnemis velaris, *Selys, An. Soc. Esp.* xi. p. 31 (1882).

Agrion velare, *Hag. Verh. zool.-bot. Ges. Wien*, viii. p. 479 (1858).

Agriocnemis pygmæa, *Selys, Bull. Acad. Belg.* (2) xliii. p. 146 (1877).

Rambodde (*Hagen*).

Also occurs in the Philippines.

*†72. *LESTES ELATUS*.

Lestes elata, *Selys, Bull. Acad. Belg.* (2) xiii. p. 318 (1862).

Trincomali and neighbourhood, Jan. 4, Oct. 3, 25, 30, Nov. 24, 1891.

Rambodde (*Hagen*); Pundaloya (*Green*).

This species varies much, but may always be distinguished by the two broad green bands on the back of the thorax, which are securiform behind, and below which three black or green spots in an oblique series are always visible. In the less adult specimens the pterostigma is yellow, and the abdomen is yellowish towards the extremity and on the sides. In the most adult specimens the pterostigma is blackish, and the abdomen is almost entirely bronzy black above, even the anal appendages being blackish. The postnodal cross-nervures vary from 10 to 13.

*†73. *LESTES DECIPIENS*, sp. n.

Long. corp. 35 millim.; exp. al. 40 millim.; long. pter. $1\frac{1}{2}$ millim.

Male. Pulverulent above, yellowish below; head blackish above; orbits sometimes yellowish, labrum sometimes greenish; prothorax with green spots in the middle above and with black ones on the sides; mesothorax pulverulent bluish-grey, with two broad dorsal tripartite green stripes, separated by a pulverulent or yellowish stripe; sides with some blackish spots, and sometimes with traces of two obsolete blackish bands; abdomen black, pulverulent above, and yellowish below except at the extremity; segments 1 and 2 yellowish on the sides, the remaining segments with a narrow ring at the base and another at the extremity, before which the yellowish colour runs upwards triangularly on the sides; on the 7th segment the basal band, and on the 9th segment the terminal band is much broader; last three segments black, with yellow spots on the sides; anal appendages yellowish, black at the base and tip, as long as the 9th segment, with a small tooth on each side on the inside of the base, then somewhat flattened and depressed, the tips angulated downwards and curving inwards; lower appendages short, black.

Legs yellow, lined with black, and set with rather long hairs.

Wings clear hyaline; pterostigma blackish, about twice as long as broad, covering two cells; 9-12 postnodal cross-nervures.

Female very similar, but yellowish where the male is pulverulent; anal appendages as long as the 10th segment, yellowish. Immature specimens are almost entirely yellowish, with only the outline of the tripartite bands, &c., indicated, and the pterostigma yellowish.

Nilavelli, Nov. 16, 1890. 6th Milestone, Nilavelli Road, Dec. 9, 1891. Mahagany, Sept. 20, Dec. 20, 1891. Kandy, May 19, 1892.

Allied to *L. præmorsa* (Philippines) and *L. quercifolia*, De Selys (Menado and Sulu), but apparently distinct.

It is to be regretted that Col. Yerbury obtained no specimens of the second section of *Lestes*, with narrow pointed triangles, of which several imperfectly-known species occur in Ceylon.

74. LESTES ORIENTALIS.

Lestes orientalis, Selys, *Bull. Acad. Belg.* (2) xiii. p. 322 (1862).

Rambodde (*Nietner*).

75. LESTES GRACILIS.

Lestes gracilis, Selys, *Bull. Acad. Belg.* (2) xiii. p. 327 (1862).

Rambodde (*Nietner*); Pundaloya (*eadem*?) (*Green*).

76. LESTES DIVISUS.

Lestes divisa, Selys, *Bull. Acad. Belg.* (2) xiii. p. 328 (1862).

Rambodde (*Nietner*).

EXPLANATION OF THE PLATES.

PLATE XLI.

Fig. 1. *Hydrobasileus extraneus*, Karsch, ♀, p. 547.

2. *Disparoneura tenax*, Selys, ♂, p. 562.

3. *Bradinyopyga stigmata*, Kirby, ♂, p. 553.

4. *Tetrathemis Yerburi*, Kirby, ♀, p. 556.

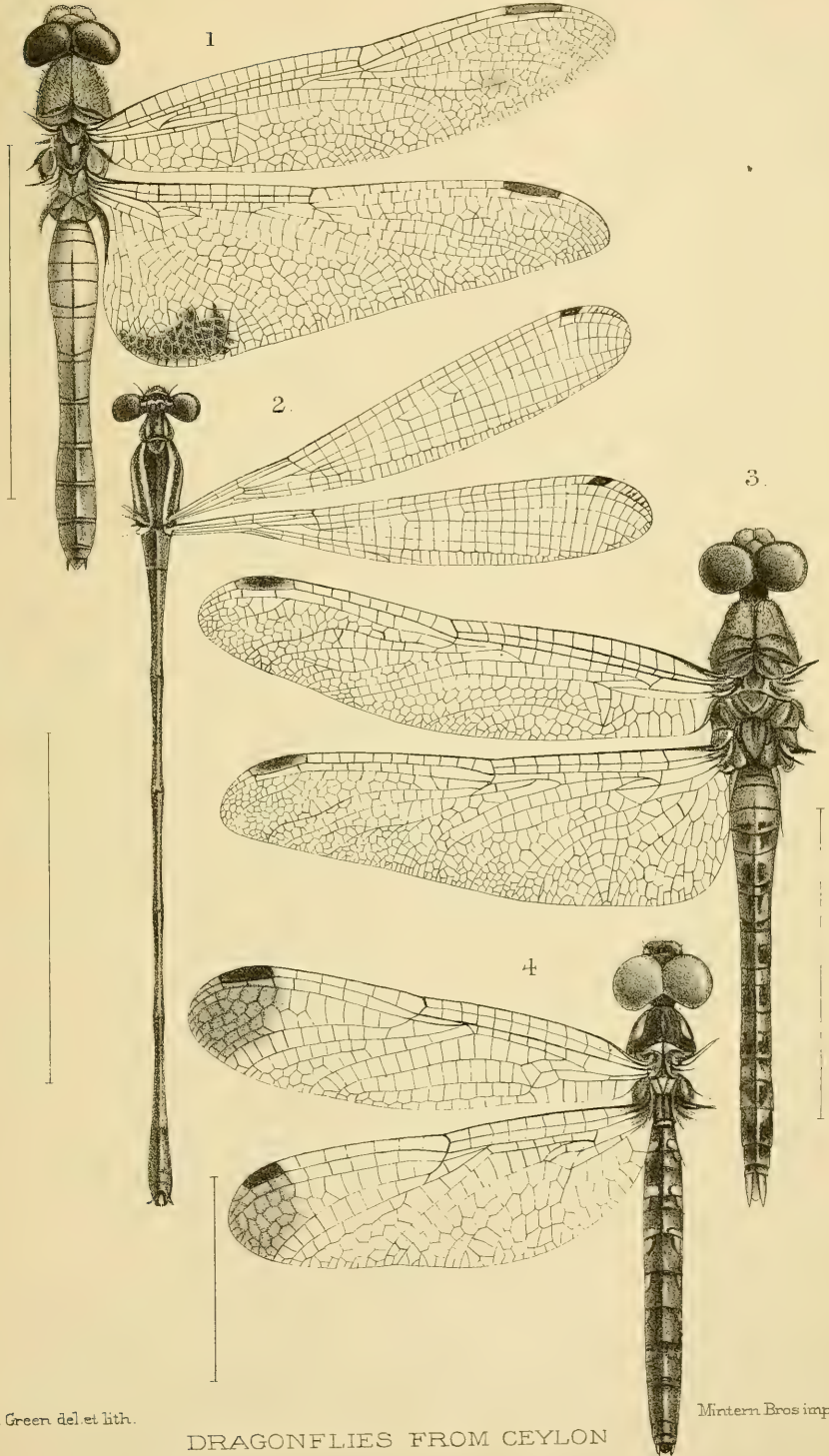
PLATE XLII.

Fig. 1. *Platysticta apicalis*, Kirby, ♂, p. 561.

2. *Urothemis vittata*, Kirby, ♀, p. 552.

3. *Orthetrum oblitum*, Ramb., ♀, p. 554.

4. *Pseudophæa carissima*, Kirby, ♂, p. 559.



J Green del et lith.

Mintern Bros imp.

DRAGONFLIES FROM CEYLON

